

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method of forming an integrated circuit, including forming a dielectric film, the method comprising:

forming a carbon doped oxide (CDO) film on a substrate; and

treating the CDO film with an electron beam;

wherein the CDO film is unheated during treatment; and

wherein exposure of the CDO film with the electron beam delivers an overall electron

flux of between about 3000 $\mu\text{C}/\text{cm}^2$ to about 5000 $\mu\text{C}/\text{cm}^2$;

whereby the dielectric film and integrated circuit are formed.

2. (Previously Presented) The method of claim 1, wherein an energy of electrons in the electron beam is about 3 keV or greater.

3. (Previously Presented) The method of claim 1, wherein an energy of electrons in the electron beam is about 8 keV or greater.

4. (Previously Presented) The method of claim 1, wherein an energy of electrons in the electron beam is determined such that a predicted Kanaya-Okayama range of the electrons exceeds a thickness of the CDO film.

5. (Previously Presented) The method of claim 1, further comprising:

preparing the CDO film on the substrate by using chemical vapor deposition.

6. (Previously Presented) The method of claim 1, wherein the dielectric film is an interlevel dielectric film, and the method further comprises:

preparing a damascene structure in the CDO film.

7. (Previously Presented) The method of claim 6, further comprising:

filling the damascene structure with a metal.

8. (Currently Amended) The method claim 7, further comprising:

removing excess metal by using chemical mechanical polishing (CMP);

wherein excess metal is metal that overfills the damascene structure and spills onto the dielectric surface.

9. (Previously Presented) The method of claim 8, wherein the metal comprises copper.

10 to 28. (Cancelled)

29. (Currently Amended) A method of forming a dielectric, comprising:

forming a carbon doped oxide (CDO) film on a substrate; and
treating the CDO film with an electron beam;
wherein the CDO film is unheated during treatment; and
wherein exposure of the CDO film with the electron beam delivers an overall electron
flux of between $3000 \mu\text{C}/\text{cm}^2$ to $5000 \mu\text{C}/\text{cm}^2$;
whereby the dielectric is formed.

30. (Previously Presented) The method of claim 29, wherein an energy of electrons in the electron beam is about 3 keV or greater.

31. (Previously Presented) The method of claim 29, wherein an energy of electrons in the electron beam is about 8 keV or greater.

32. (Previously Presented) The method of claim 29, wherein an energy of electrons in the electron beam is determined such that a predicted Kanaya-Okayama range of the electrons exceeds a thickness of the CDO film.

33. (Previously Presented) The method of claim 29, further comprising:
preparing the CDO film on the substrate by using chemical vapor deposition.

34. (Previously Presented) The method of claim 29, wherein the dielectric comprises an interlevel dielectric film, and the method further comprises:

preparing a damascene structure in the CDO film.

35. (Previously Presented) The method of claim 34, further comprising:

filling the damascene structure with a metal.

36. (Currently Amended) The method claim 35, further comprising:

removing excess metal by using chemical mechanical polishing (CMP);

wherein excess metal is metal that overfills the damascene structure and spills onto the dielectric surface.

37. (Previously Presented) The method of claim 36, wherein the metal comprises copper.

38. (New) The method of claim 1, wherein the electron beam is applied within an electron beam chamber, and the electron beam chamber comprises a non-reactive gas.

39. (New) The method of claim 38, wherein the pressure of the non-reactive gas is between about 8 mTorr and 50 mTorr.

40. (New) The method of claim 39, wherein the non-reactive gas is He.
41. (New) The method of claim 39, wherein the non-reactive gas is Ar.
42. (New) The method of claim 29, wherein the electron beam is applied within an electron beam chamber, and the electron beam chamber comprises a non-reactive gas.
43. (New) The method of claim 42, wherein the pressure of the non-reactive gas is between about 8 mTorr and 50 mTorr.
44. (New) The method of claim 43, wherein the non-reactive gas is He.
45. (New) The method of claim 43, wherein the non-reactive gas is Ar.
46. (New) A method of forming an integrated circuit, including forming a dielectric film, the method comprising:
forming a carbon doped oxide (CDO) film on a substrate; and
treating the CDO film with an electron beam;
wherein an energy of electrons in the electron beam is determined such that a predicted Kanaya-Okayama range of the electrons exceeds a thickness of the CDO film.

47. (New) A method of forming a dielectric, comprising:

forming a carbon doped oxide (CDO) film on a substrate; and

treating the CDO film with an electron beam;

wherein an energy of electrons in the electron beam is determined such that a predicted
Kanaya-Okayama range of the electrons exceeds a thickness of the CDO film.